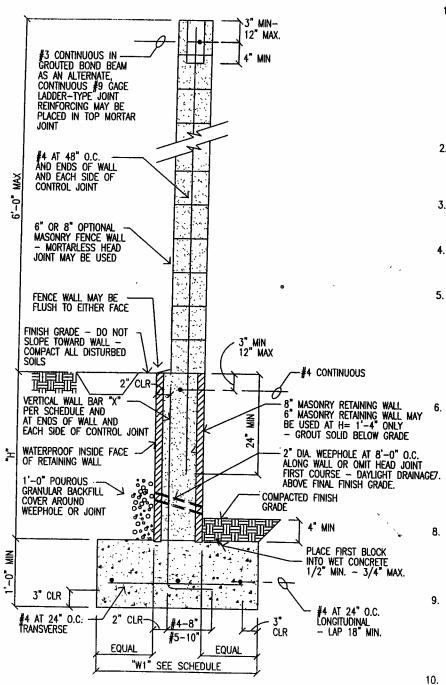
Clark County
Department of Building
500 S. Grand Central Pky.
Las Vegas, Nevada 89115-3530
(702) 455-3000

## STANDARD RETAINING WALL and OPTIONAL MASONRY FENCE

B-101-1 05/29/00 Pg. 1 of 3

**GENERAL NOTES** 



- 1. FOOTINGS SHALL BEAR ON COMPETANT UNDISTURBED NATURAL SOIL OR COMPACTED FILL. REMOVE ALL LOOSE MATERIAL BEFORE CONCRETE PLACEMENT. GRADE CHANGES SHALL BE MADE USING STEP FOOTING DETAIL. OTHERWISE TOP OF FOOTING SHALL BE APPROXIMATELY LEVEL. DO NOT CONSTRUCT WALL OVER HIGHLY EXPANSIVE OR COLLAPSABLE SOIL OR OVER SOIL FISSURES WITHOUT SOIL STABILIZATION AS DIRECTED BY A GEOTECHNICAL ENGINEER.
- HOLLOW LIGHTWEIGHT CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90, GRADE N, TYPE 1 WITH 1900 PSI MINIMUM COMPRESSIVE STRENGTH.
- STEEL REINFORCING BARS SHALL BE ASTM A615, GRADE 40 FOR #4, GRADE 60 FOR #5 AND LARGER.
- DO NOT SLOPE RETAINED SOIL TOWARD WALL. PROVIDE POSITIVE DRAINAGE AWAY FROM WALL ON BOTH SIDES.
- 5. VERTICAL EXPANSION OR CONTROL JOINTS SHALL BE MADE ON FENCE WALLS AT INTERVALS NOT TO EXCEED 6 TIMES THE FENCE WALL HEIGHT. JOINTS ON FENCE SHALL BE MADE BY MEANS OF PLASTER BLOCK OR CONTINOUS VERTICAL RAKE JOINT. HORIZONTAL REINFORCING NEED NOT BE CONTINUOUS THRU JOINT WHERE PILASTER BLOCK IS USED.
  - VERTICAL EXPANSION OR CONTROL JOINTS ON RETAINING WALL ARE OPTIONAL. FOR BEST RESULTS, JOINTS ARE RECOMENDED AT INTERVALS NOT EXCEEDING 8 TIMES THE WALL HEIGHT.

DO NOT LOCATE WITHIN DISTANCE "H"
OF UPPER SIDE OF WALL ANY BUILDING
FOUNDATION, PARKING, ROADWAYS,
LARGE TREES OR ADDITIONAL RETAINING WALLS.

- THE BUILDER/CONTRACTOR OR ANY OTHER PARTY USING THIS DESIGN RELIEVES THE BUILDING AGENCY FROM ANY LIABILITY FOR ALL INJURIES, CLAIMS, EXPENSES OR DAMAGES RESULTING FROM CONSTRUCTION OF THIS DESIGN.
- LOCATIONS REQUIRING DESIGNS EXCEEDING LIMITATIONS OF THIS STANDARD SHALL BE PREPARED BY A NEVADA REGISTERED PROFESSIONAL ENGINEER OR ARCHITECT AND APPROVED BY THE BUILDING AGENCY FOR A SPECIFIC LOCATION.
- INSPECTION OF CONSTRUCTION SHALL BE ACCOMPLISHED ACCORDING TO ALL DIRECTIVES GIVEN BY BUILDING DEPARTMENT OFFICIALS.

Boulder City
Building Department
401 California Avenue
Boulder City, Nevada 89005
(702) 293-9282

Las Vegas Building & Safety Dept. 731 S. 4th Street Las Vegas, Nevada 89101 (702) 229-6916 Mesquite
Building Department
10 East Mesquite Blvd.
Mesquite NV. 89027
(702) 346-2835

Clark County
Department of Building
500 S. Grand Central Pky.
Las Vegas, Nevada 89115-3530
(702) 455-3000

## STANDARD RETAINING WALL and OPTIONAL MASONRY FENCE

B-101-2 5/29/00 Pg. 2 of 3

### CONCRETE:

CONCRETE SHALL BE 5 SACK MINIMUM, TYPE V CEMENT WITH A 6" MAXIMUM SLUMP. 28 DAY STRENGTH SHALL EXCEED 2500 PSI. PLACE CONCRETE TO MINIMUM DIMENSIONS SHOWN WITH 3 INCHES COVER TO ALL REINFORCING STEEL.

A GOOD CONCRETE MIXTURE FOR FOOTINGS IS BY VOLUME: 1 PART PORTLAND CEMENT, 2.75 PARTS SAND, 4 PARTS GRAVEL NOT LARGER THAN 1.5 INCHES, AND JUST ENOUGH WATER TO MAKE THE MIXTURE "MUSH" AND WORKABLE, BUT NOT "SOUPY." THE WATER CONTENT SHOULD NOT 8E MORE THAN 7.5 GALLONS PER SACK OF CEMENT FOR THE ABOVE MIX.

#### MORTAR:

MORTAR SHALL BE 2000 PSI TYPE S.

A GOOD MORTAR MIXTURE SHOULD BE IN PROPORTIONS OF 1 PART PORTLAND CEMENT, 1/3 PART LIME (HYDRATED),

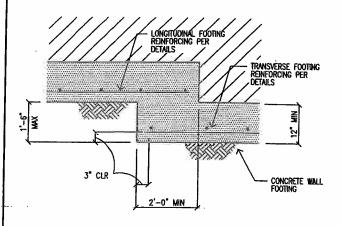
AND 3 PARTS SAND. THE WATER CONTENT SHOULD BE ACCORDING TO ABSORPTION AND SUCTION ABILITY TO ASSURE NORMAL FLOW AND SPREADING WITH A TROWEL.

### GROUT:

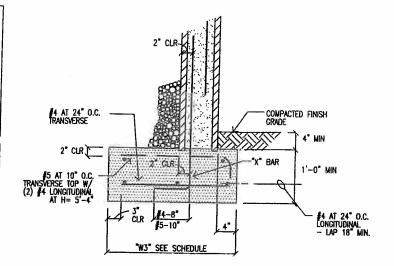
GROUT SHALL BE 2000 PSI.

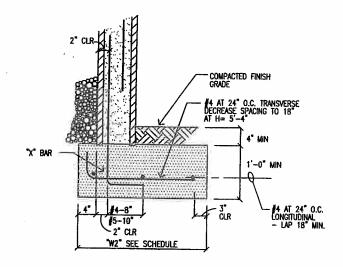
A GOOD GROUT MIXTURE SHOULD BE COMPOSED BY VOLUME OF 1 PART

PORTLAND CEMENT, 2 PARTS SAND, AND 1 PART PEA GRAVEL. SUFFICIENT WATER SHALL BE ADDED TO PRODUCE CONSISTENCY FOR POURING WITHOUT SEGREGATION.



TYPICAL STEPPED CONCRETE FOOTING





ALTERNATE FOOTING TYPES

MAXIMUM RETAINING WALL HEIGHT "H"	MINIMUM FOOTING WIDTH			VERTICAL WALL BAR "X"
	"W1"	"W2"	"W3"	DAR X
1'-4"	2'-0"	2'-0"	2'-0"	#4 AT 48" O.C.
2'-8"	2'-4"	2'-6"	2'-6"	#4 AT 48" O.C.
4'-0"	3'-0"	3'-4"	3'-4"	#5 AT 48" O.C. OR #4 AT 32" O.C.
5'-4"	3'-4"	5'-0"	5'-0"	#5 AT 16" O.C.

Boulder City
Building Department
401 California Avenue
Boulder City, Nevada 89005
(702) 293-9282

Henderson Building Department 240 Water St. Henderson, Nevada (702) 566-2718

Las Vegas
Building & Safety Dept.
731 S. 4th Street
Las Vegas, Nevada 89101
(702) 229-6916

Mesquite
Building Department
10 East Mesquite Blvd.
Mesquite NV. 89027
(702) 346-2835

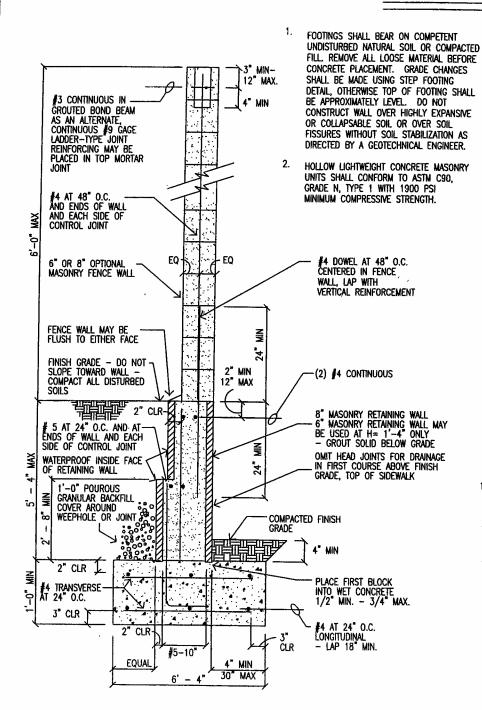
North Las Vegas
Building Department
Avenue
North Las Vegas, Nevada
(702) 633-1577

Clark County
Department of Building
500 S. Grand Central Pky.
Las Vegas, Nevada 89115-3530
(702) 455-3000

# 5 '- 4" MAXIMUM HEIGHT RETAINING WALL and OPTIONAL MASONRY FENCE

B-101-3 5/29/01 Pg. 3 of 3

## **GENERAL NOTES**



- STEEL REINFORCING BARS SHALL BE ASTM A615, GRADE 40 FOR #4, GRADE 60 FOR #5 AND LARGER.
- DO NOT SLOPE RETAINED SOIL TOWARD WALL. PROVIDE POSITIVE DRAINAGE AWAY FROM WALL ON BOTH SIDES.
- 5. VERTICAL EXPANSION OR CONTROL JOINTS SHALL BE MADE ON FENCE WALLS AT INTERVALS NOT TO EXCEED 6 TIMES THE FENCE WALL HEIGHT. JOINTS ON FENCE SHALL BE MADE BY MEANS OF PLASTER BLOCK OR CONTINOUS VERTICAL RAKE JOINT. HORIZONTAL REINFORCING NEED NOT BE CONTINUOUS THRU JOINT WHERE PILASTER BLOCK IS USED.
- VERTICAL EXPANSION OR CONTROL JOINTS ON RETAINING WALL ARE OPTIONAL. FOR BEST RESULTS, JOINTS ARE RECOMENDED AT INTERVALS NOT EXCEEDING 8 TIMES THE WALL HEIGHT.
- DO NOT LOCATE WITHIN DISTANCE "H"
  OF UPPER SIDE OF WALL ANY BUILDING
  FOUNDATION, PARKING, ROADWAYS,
  LARGE TREES OR ADDITIONAL RETAINING WALLS.
- 8. The Builder/Contractor or any other Party using this design relieves the Building agency from any liability for All injuries, claims, expenses or damages resulting from construction of this design.
- Locations requiring designs exceeding Limitations of this standard shall be prepared by a nevada registered professional engineer or architect and approved by the building agency for a specific location.
- INSPECTION OF CONSTRUCTION SHALL BE ACCOMPLISHED ACCORDING TO ALL DIRECTIVES GIVEN BY BUILDING DEPARTMENT OFFICIALS.
- 11. GROUTED CELLS SHELL BE MECHANICALLY VIBRATED
- 12. USE SPECIAL CONCRETE MIX, DESIGNED BY REGISTERED ENGINEER WHERE SOIL SULPHATE EXPOSURE EXCEEDS NEGLIGIBLE LEVELS PER UBC TABLE 19-A-4.

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